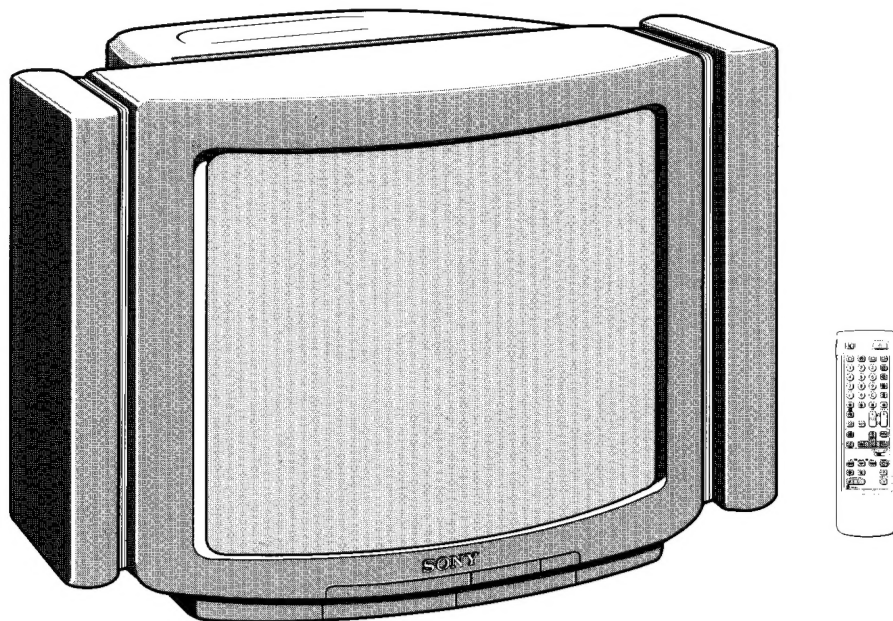


# AE-2B CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
<b>KV-E2951A</b>	RM-831	Italian	SCC-G59K-A	<b>KV-E2953E</b>	RM-831	Spanish	SCC-G56J-A
<b>KV-E2951B</b>	RM-831	French	SCC-G57J-A	<b>KV-E2951K</b>	RM-831	OIRT	SCC-G73F-A
<b>KV-E2951D</b>	RM-831	AEP	SCC-G45K-A				



TRINITRON® COLOR TV  
**SONY®**

ITEM MODEL	Television system	Stereo system	Channel coverage	Color system
Italian	B/G/H, D/K	GERMAN Stereo	ITALIA VHF:A-H2 (C) UHF:21-69 PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 D/K VHF:R01-R12 UHF:R21-R69	PAL, NTSC4.43, NTSC3.58 (VIDEO IN)
French	B/G/H, D/K L, I	GERMAN Stereo	L VHF:F02-F10 UHF:F21-F60 CABLE:B-Q B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69 I UHF:B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
AEP	B/G/H, D/K	GERMAN Stereo	PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
Spanish	B/G/H, D/K	GERMAN/NICAM Stereo	PAL B/G VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL NTSC4.43, NTSC3.58 (VIDEO IN)
OIRT	B/G/H, D/K	EASTERN Stereo	PAL B/G/H VHF:E2-E12 UHF:E21-E69 CABLE TV (1):S1-S41 CABLE TV (2):S01-S05, M1-M10, U1-U10 ITALIA VHF:A-H2 (C) UHF:21-69 D/K VHF:R01-R12 UHF:R21-R69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

MODEL	Italian	French	AEP	Spanish	OIRT
Power Consumption	116W	129Wh	133W	137W	133W

## SPECIFICATIONS

Picture tube Super Trinitron  
Approx. 72 cm (29 inches)  
(Approx. 68 cm picture measured diagonally)  
110°-deflection

### Input/Output Terminals

#### [REAR]

→ 1 21-pin Euro connector  
(CENELEC standard)

Inputs for audio and video signals

- inputs for RGB
- outputs of TV video and audio signals
- ↔ 2/→ 2 21-pin Euro connector
- inputs for audio and video signals
- inputs for S video
- outputs for audio and video signals (selectable)
- ↔ 4/→ 4 21-pin Euro connector
- inputs for audio and video signals
- inputs for S video

- outputs for audio and video signals (monitor out)

→ 2, → 4 S video inputs

- 4 pin DIN

⊖ Audio inputs (L, R) -phono jacks

→ S video output - 4 pin DIN

⊖ Audio outputs - phono jacks

⊖ Audio outputs (variable) - phono jacks

External speaker terminals : 2 pin DIN

Woofer terminal : 2-pin

Model name Item	KV-E2951A	KV-E2951B	KV-E2951D	KV-E2953E	KV-E2951K
Pal Comb	OFF	OFF	OFF	OFF	OFF
PIP	ON	ON	ON	ON	ON
RGB Priority	ON	ON	OFF	OFF	OFF
Woofer Box	ON	ON	ON	ON	ON
Just 60 Progr. ( refer to I. )	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON
Scart 4	ON	ON	ON	ON	ON
Dyn. Convergence	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON
Norm B/G	ON	ON	ON	ON	ON
Norm I	OFF	ON	OFF	OFF	OFF
Norm D/K	ON	ON	ON	ON	ON
Norm AUS	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF
Bass Offset	0	0	0	0	0
Treble Offset	0	0	0	0	0
DSP / Equalizer	OFF	OFF	OFF	OFF	OFF
DOLBY PROLOGIC	OFF	OFF	OFF	OFF	OFF
NICAM	ON	ON	ON	ON	ON
Double page text ( refer to II. )	OFF	OFF	OFF	OFF	OFF
nat-opt byte ( refer to IV. )	3	3	3	3	5
Language Preset	Italiano	Francais	Deutsch	None	OIRT

**[FRONT]**

- 3 Video input-phono jack
- ⊖ Audio input-phono jacks
- 3 S video input 4-pin DIN
- 🎧 Headphone jack : Stereo minijack

Sound output	2x11W Side Speakers (RMS) 25W Woofer (RMS) 2x25W Side Speaker (Music)
Power requirement	220-240V
Dimensions	Approx. 802 x 624 x 525 mm
Weight	Approx. 55 kg
Supplied accessories	RM-831 Remote Commander (1) IEC designation R6 batteries (2)
Other features	NICAM, FASTTEXT

**[RM-831]**

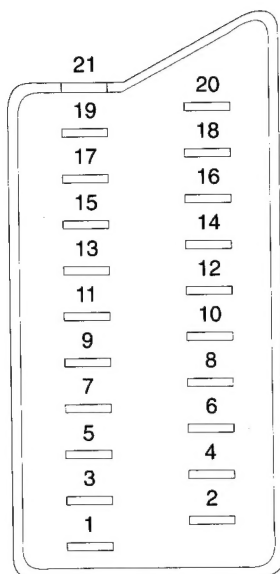
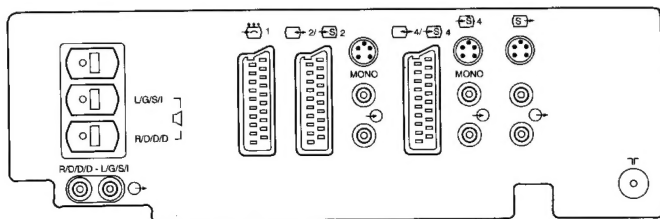
Remote control system, infrared control

Power requirements 1.5V dc  
1 battery IEC designation  
R6 (size AA)

Dimensions Approx. 65 x 225 x 21 mm (w/h/d)  
Weight Approx. 157g (Not including Batteries)

**Design and specifications are subject to change without notice.**

## 21 pin connector (→ 1 ↔ 2 / ↔ 4)



Pin No.	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard Level : 0.5V rms Output impedance : Less than 1kohm*
2	○	○	○	Audio input B (right)	Standard Level : 0.5V rms Input impedance : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard Level : 0.5V rms Output impedance : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard Level : 0.5V rms Input impedance : More than 10kohm*
7	○	●	●	Blue input	0.7 ± 3dB, 7.5 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More than 10kohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 ± 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	-	-	Red input	0.7V ± 3dB, 75 ohms, positive
	-	○	○	(S signal) chroma input	0.3V ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync: 0.3V(-3+10dB)
20	○	-	-	Video input	1V ± 3dB, 75ohms, positive sync: 0.3V(-3+10dB)
	-	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync: 0.3V(-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open)

\* at 20Hz - 20kHz

# TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
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	Connecting and Operating Optional Equipment.....	14


## CAUTION

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.**

## WARNING !!

AN ISOLATING TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD, DUE TO A LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

## SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLIMENTS PUBLISHED BY SONY.


## ATTENTION

**APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.**

## ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

## ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ !!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

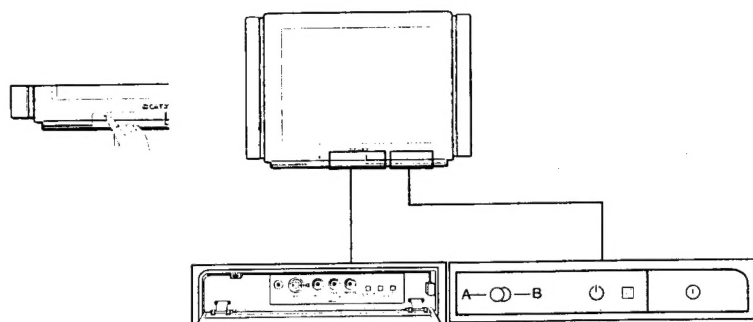
## SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

### Overview

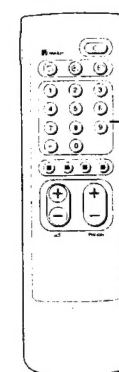
This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

#### TV set - front

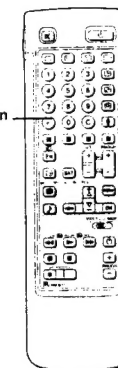


Symbol	Name	Refer to page
⏻	Main power switch	42
⏻	Standby indicator	42
A-CD-B	Stereo A/B indicators	44
🎧	Headphones jack	51
3, 3, 3	Input jacks (S-video/video/audio)	51
⏻	Function selector (Programme/volume/input)	42
⏻	Adjustment buttons for function selector	42

#### Remote Commander RM-831



Simple side



Full-Function side

**Note**  
The SAT button does not operate with this TV.

#### TV/Teletext-operation

Symbol	Name	Refer to Page
🔇	Mute on/off button	43
⏻	Standby button	42
⏻	TV power on/TV mode selector button	42
📺	Teletext button	43
📺	Input mode selector	43
📺	Output mode selector	51
1,2,3,4,5,6,7,8,9, and 0	Number buttons	42
⏻	Double-digit entering button	42
C	Direct channel entering button	39
⏻	Volume control button	42
PROGR +/-	Programme selectors	42
📺	Teletext page access buttons	47
📺	Picture adjustment button	44
📺	Sound adjustment button	44
📺	On-screen display button	43
📺	Teletext hold button	47
📺	Time display button	43
📺	Fasttext buttons	47

#### PIP (Picture in picture) operation

Symbol	Name	Refer to Page
📺	PIP on/off button	46
📺	PIP source selector	46
📺	Swap button	46
📺	PIP position changing button	46

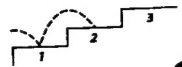
#### Menu operation

Symbol	Name	Refer to Page
MENU	Menu on / off button	36
⏻	Select buttons	36
OK	OK (confirming) button	36
⏻	Back button	36

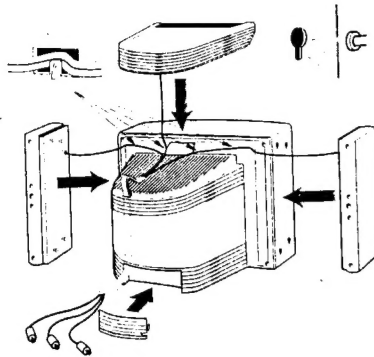
#### Video operation

Symbol	Name	Refer to Page
VTR1/2/3	Video equipment selector	52
MDP		
⏻	Video equipment operation buttons	52
PROGR +/-		

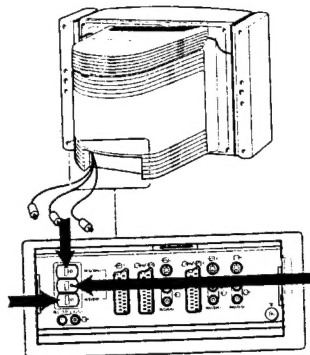
## Step 2 Connection



### 1 Connect the speakers and the woofer



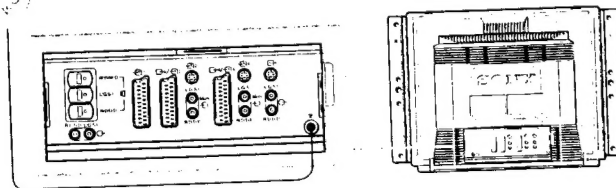
Hook the two side speakers (L = left, R = right) into the openings on both sides of the TV. Clip the cables of the speakers into the hooks on top of the set and pass the cables down through the opening at the rear of the TV (see above illustration). Plug the connectors of the speaker cords into the rear of the TV (L/G/S/I for the left box, R/D/D/D for the right box with the longer cable).



Pass the cable of the woofer down through the opening at the rear of the set. Place the woofer on top of the TV and plug the connector of the woofer into the rear of the TV (W/G/W/G).

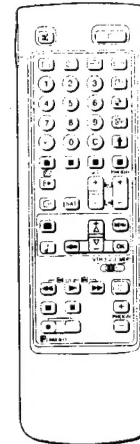
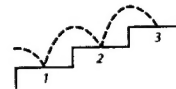
**Safety Information:** If the side speakers are not connected to the set, make sure to close the side openings using the supplied plugs. Never insert any objects through the openings.

### 2 Connect the aerial



Fit an IEC aerial connector attached to 75-ohm coaxial cable (not supplied) to the "I" socket at the rear of the TV.

## Step 3 Tuning in to TV Stations



Once you have set up the TV, you can choose the language of the menu. Then you should preset the channels (up to 100 channels) by choosing either the automatic or manual method.

The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you only have a few channels and want to preset channels one by one. The manual method is also convenient for allocating programme numbers to various video input sources.

### Before you begin

- Check that the Full-Function side of the Remote Commander is visible.
- Locate Menu operation buttons on the Remote Commander. They are shaded in the illustration at the left.

### 1 Choose a language

- 1 Depress on the TV. The TV will switch on. If the standby indicator on the TV is lit, press or a number button on the Remote Commander.
- 2 Press the MENU button. The «LANGUAGE» menu appears. (See Fig. 1)
- 3 Select the language you want with  $\Delta$  or  $\nabla$  and then press OK.

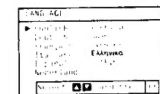


Fig. 1.



### 2 Display the Menu

- 1 Press the  $\leftarrow$  button. The main menu appears. (See Fig. 2) Now, choose one of the methods described overleaf: "Preset Channels Automatically" or "Preset Channels Manually".



Fig. 2.

To go back to main menu: Keep pressing  $\leftarrow$ .

To go back to the normal TV picture: Press MENU. Normal TV picture will be restored after one minute if menu functions are not selected.

**Note on the Demo function:** If you choose Demo on the main menu, you can see a sequential demonstration of the menu functions.

Press MENU to stop the function.

With this method, you can preset all receivable channels at once.

**To stop automatic channel presetting:**  
Press  $\leftarrow$  on the Remote Commander.

#### Notes:

• After presetting the channels automatically, you can check which channels are stored on which programme positions. For details, see "Using the Programme Table" on page 44.

• You can sort the programme positions to have them appear on screen in the order you like. For details, see "Sorting Programme Positions" on page 39.

**Note:**  
Programme names are automatically taken from Teletext if available. If not, please refer to page 40 "Captioning a Station name" for more information.

Use this method if there are only a few channels in your area to preset or if you want to preset channels one by one. You may also allocate programme numbers to various video input sources.

**If you have made a mistake:**  
Press  $\leftarrow$  to go back to the previous position.  
**To go back to main menu:**  
Keep pressing  $\leftarrow$ .  
**To go back to the normal TV picture:**  
Press MENU.

### 3 Preset channels automatically

- 1 Select  $\rightarrow$  Preset $\leftarrow$  with  $\Delta$ + or  $\nabla$ - and press OK. The  $\rightarrow$  PRESET $\leftarrow$  menu appears. (See Fig. 3.)
- 2 Select  $\rightarrow$  Auto Programme $\leftarrow$  with  $\Delta$ + or  $\nabla$ - and press OK. The  $\rightarrow$  AUTO PROGRAMME $\leftarrow$  menu appears. (See Fig. 4.)
- 3 Press OK.  
Select if necessary the TV broadcast system with  $\Delta$ + or  $\nabla$ - and press OK. (B/G for western European countries, D/K for eastern European countries) The first element of the "PROG" number will be highlighted.
- 4 Select the programme (number button) from which you want to start presetting. Select the first element of the double-digit number with  $\Delta$ + or  $\nabla$ - or the number buttons (e.g. For "04", select "0" here) and press OK. The second element of "PROG" will be highlighted.
- 5 Select the second element of the double-digit number with  $\Delta$ + or  $\nabla$ - or the number buttons (e.g. For "04", select "4" here) (See Fig. 5.) and press OK.
- 6 Select "C" or "S" with  $\Delta$ + or  $\nabla$ - and press OK. The automatic channel presetting starts.  
When presetting is finished the preset menu reappears. All available channels are now stored on successive number buttons. (Press menu to restore normal TV picture.)

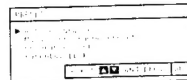


Fig. 3.

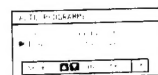


Fig. 4.



Fig. 5.

GB

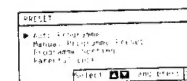


Fig. 6.



Fig. 7.

**To tune in a channel by frequency:**  
After selecting F in step 6, enter three digits using the number buttons. Press OK.

- 3 Using  $\Delta$ + or  $\nabla$ -, select the programme position (number button) to which you want to preset a channel, and press OK.
- 4 Keep pressing  $\nabla$ - to select programme numbers higher than 10.
- 5 Select if necessary the TV broadcast system (B/G for western European countries, D/K for eastern European countries) or a video input source (EXT) with  $\Delta$ + or  $\nabla$ -. Then press OK. The CH position will be highlighted. (See Fig. 8.)
- 6 Using  $\Delta$ + or  $\nabla$ -, select C (to preset a regular channel), or F (to tune in by frequency), or S (cable channel) and press OK. The first element of the "CH" number will be highlighted. If you have selected EXT in step 5, select the video input source with  $\Delta$ + or  $\nabla$ -. (See Fig. 9.)

There are two ways to preset channels. If you know the channel number, go to step "7-Manual".

or

if you don't know the channel number, go to step "7- Search".

#### 7 Manual

- a Select the first element of the "CH" number with  $\Delta$ + /  $\nabla$ - or the number buttons and press OK. The second element of the "CH" number will be highlighted.
- b Select the second element of the number with  $\Delta$ + /  $\nabla$ - or the number buttons. The selected number appears. (See Fig. 10.)
- c Press OK. The "SEARCH" position is highlighted and the selected channel is now stored. (See Fig. 11.)
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.

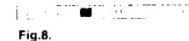


Fig. 8.



Fig. 9.

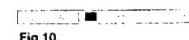


Fig. 10.



Fig. 11.



Fig. 12.

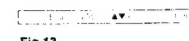


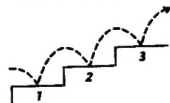
Fig. 13.

#### 7 Search

- a Press OK repeatedly until the colour of the SEARCH position changes.
- b Start searching for the channel with  $\Delta$ + (up) or  $\nabla$ - (down). The CH position changes colour. (See Fig. 12.) The CH number starts counting up or downwards. When a channel is found, it stops. (See Fig. 13.)
- c Press OK if you want to store this channel. If not, press  $\Delta$ + or  $\nabla$ - to continue channel searching.
- d Press OK until the cursor appears by the next programme position.
- e Repeat steps 3 to 7 to preset other channels.



## Additional Presetting Functions

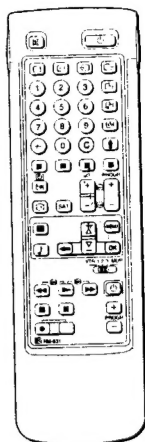


This section shows you additional presetting functions such as sorting or skipping programme positions, captioning a station name, manual fine-tuning, and using the parental lock.

### Before you begin

- Check that the Full Function side of the Remote Commander is visible
- Locate the Menu operation buttons.

### PROGRAMME SORTING



For programme positions beyond 15:  
The display scrolls automatically.

If you have made a mistake:  
Press  $\leftarrow$  to go back to the previous position.  
To go back to main menu:  
Keep pressing  $\leftarrow$ .  
To go back to the normal TV picture:  
Press MENU.

### Sorting Programme Positions

With this function, you can sort the programme positions to a preferable order.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The «PRESET» menu appears.
- 3 Select «Programme Sorting» with  $\Delta$  or  $\nabla$  and press OK. The «PROGRAMME SORTING» menu appears. (See Fig. 14.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to move to another programme position and press OK. The colour of the selected position changes. (See Fig. 15.)
- 5 Using the number buttons select the programme position (e.g. 05 for programme position 5) to which you want to move the selected programme and press OK. Now the two programme positions have been sorted. (See Fig. 16.)
- 6 Repeat steps 4 and 5 to exchange other programme positions.

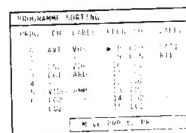


Fig. 14.

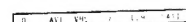


Fig. 15.

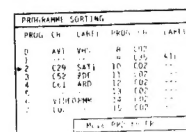


Fig. 16.

### Tuning in a Channel Temporarily

You can tune in a channel temporarily, even when it has not been preset. Use the buttons on the Full-Function side of the Remote Commander.

- 1 Press C on the Remote Commander. For cable channels, press C twice. The indication "C" ("S" for cable channels) appears on the screen.
- 2 Enter the double-digit channel number using the number buttons (e.g. for channel 4, first press 0, then 4). The channel appears. However, the channel will not be stored.

C

### MANUAL PROGRAMME PRESET

### Skipping Programme Positions

You can skip unused programme positions when selecting programmes with the PROG  $\pm$  buttons. However, the skipped programmes may still be called up when you use the number buttons.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The «PRESET» menu appears.
- 3 Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$  and press OK. The «MANUAL PROGRAMME PRESET» menu appears. (See Fig. 17.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position which you want to skip and press OK. The «SYSTEM» position changes colour. (See Fig. 18.)
- 5 Press  $\Delta$  or  $\nabla$  until --- appears in the SYSTEM position. (See Fig. 18.)
- 6 Press OK. (See Fig. 19)
- 7 Repeat steps 4 to 6 to skip other programme positions.



Fig. 17.



Fig. 18.

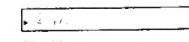


Fig. 19.

### MANUAL PROGRAMME PRESET

### Captioning a Station Name

Programme names are usually automatically taken from Teletext if available.

You can also "name" a channel or an input video source using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. ZDF). Using this function, you can easily identify which channel or video source you are watching.

- 1 Press MENU to display the main menu.
- 2 Select «Preset» with  $\Delta$  or  $\nabla$  and press OK. The «PRESET» menu appears.
- 3 Select «Manual Programme Preset» with  $\Delta$  or  $\nabla$  and press OK. The «MANUAL PROGRAMME PRESET» menu appears. (See Fig. 20.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to caption and press OK repeatedly until the first element of the LABEL position is highlighted.
- 5 Select a letter or number with  $\Delta$  or  $\nabla$  and press OK. The next element will be highlighted. Select other characters in the same way. If you want to leave an element blank, select - and press OK. (See Fig. 21.)
- 6 After selecting all the characters, press OK repeatedly until the cursor appears by the next programme position (at the left margin). Now the caption you chose is stored. (See Fig. 22.)

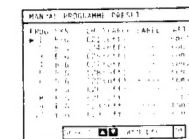


Fig. 20.

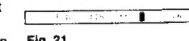


Fig. 21.

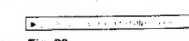


Fig. 22.

If you have made a mistake:  
Press  $\leftarrow$  to go back to the previous position.

To go back to main menu:  
Keep pressing  $\leftarrow$ .

To go back to the normal TV picture:  
Press MENU.

## MANUAL PROGRAMME PRESET

Manually fine tuned channels will be identified by **F** on the on-screen indication (see page 43).

**To reactivate AFT (automatic fine tuning):**  
Repeat from the beginning and select "ON" in step 5.

## PARENTAL LOCK

If you try to select a programme that has been blocked:  
The message "Locked" appears on the blank TV screen.

## Manual Fine-Tuning

Normally, the AFT (automatic fine-tuning) is already operating. However, if the picture is distorted, you can use the manual fine tuning function to obtain better picture reception.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The "PRESET" menu appears.
- 3 Select "Manual Programme Preset" with  $\Delta$  or  $\nabla$  and press OK. The "MANUAL PROGRAMME PRESET" menu appears. (See Fig. 23.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position corresponding to the channel which you want to manually fine-tune, and press OK repeatedly until the AFT position changes colour.
- 5 Fine-tune the channel with  $\Delta$  or  $\nabla$  so that you get the best TV reception. As you press the cursor buttons, the frequency changes from -15 to +15. (See Fig. 24.)
- 6 After fine tuning, press OK. The cursor appears beside the next programme position (at the left margin). (See Fig. 25.) Now the fine-tuned level is stored.
- 7 Repeat steps 4 to 6 to fine-tune other channels.



Fig. 23.

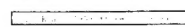


Fig. 24.

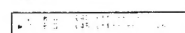


Fig. 25.



Fig. 26.

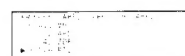


Fig. 27.

## Parental Lock

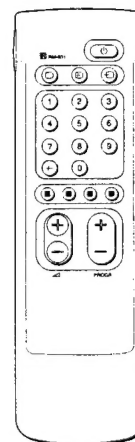
You can prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unsuitable.

- 1 Press MENU to display the main menu.
- 2 Select "Preset" with  $\Delta$  or  $\nabla$  and press OK. The "PRESET" menu appears.
- 3 Select "Parental Lock" with  $\Delta$  or  $\nabla$  and press OK. The "PARENTAL LOCK" menu appears. (See Fig. 26.)
- 4 Using  $\Delta$  or  $\nabla$ , select the programme position you want to block and press OK. The CH and LABEL of the selected programme number change colour indicating that this programme is now blocked. (See Fig. 27.)
- 5 Repeat step 4 to block other programme positions.

### Cancelling blocking

- 1 On the "PARENTAL LOCK" menu, select the programme position you want to unblock with  $\Delta$  or  $\nabla$ .
- 2 Press OK. The CH and LABEL change to normal colour indicating that the blocking has been cancelled.

## Watching the TV



If no picture appears when you depress  $\odot$  on the TV:  
And if the standby indicator on the TV is lit, the TV is in standby mode. Press  $\odot$  or one of the number buttons to switch it on.

This section explains the basic functions you use while watching TV. Most of the operations can be done using the simple side of the Remote Commander.

## Switching the TV on and off

### Switching on

Depress  $\odot$  on the TV.

### Switching off temporarily

Press  $\odot$  on the Remote Commander. The TV enters standby mode and the standby indicator on the front of the TV lights up.

### To switch on again

Press  $\odot$ , PROG  $\pm$ , or one of the number buttons on the Remote Commander.

### Switching off completely

Depress  $\odot$  on the TV.

## Selecting TV Programmes

Press PROG  $\pm$  or press number buttons.

### To select a double-digit number

Press  $\pm$ , then the numbers.  
For example, if you want to choose 23, press  $\pm$ , 2, and 3.

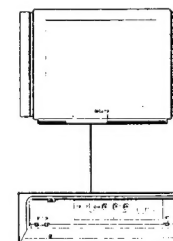
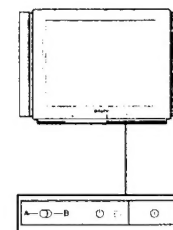
## Adjusting the Volume

Press  $\Delta$   $\pm$ .

## Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can select programmes, adjust the volume, and select video input sources.

- Press  $\Delta$   $\pm$  button repeatedly until the programme number,  $\Delta$  (for volume), or  $\nabla$  (for video input picture) appears. Then adjust with the  $\pm$  buttons.
- Press  $\pm$  buttons to switch on the TV from the standby mode.
- Press  $\pm$  simultaneously to reset picture and sound controls to the factory preset level (RESET symbol  $\dots$  is displayed.)



# Adjusting and Setting the TV Using the Menu

## Watching Teletext or Video Input

### Watching teletext

- Press **TEXT** to view the teletext.
- Press three number buttons to select a page.
- Press one of the coloured buttons for fasttext operation.
- Press **TEXT** (PAGE +) or **TEXT** (PAGE -) for the next or preceeding page.
- To go back to the normal TV picture, press **OK**.

### Watching a video input picture

Press **VIDEO** repeatedly until the desired video input appears. To go back to the normal TV picture, press **OK**.

## More Convenient Functions

Use the Full-Function side of the Remote Commander.

### Displaying the on screen indications

- Press **ON** once to display all the indications. They will disappear after some seconds.
- Press **ON** twice to have the programme number and label stay on screen. Press twice again to make indications disappear.

### Muting the sound.

Press **MUTE**.  
To resume normal sound, press **MUTE** again.

### Displaying the time

Press **TIME**. This function is available only when teletext is broadcast.  
To make the time display disappear, press **TIME** again.

### Displaying of the Programme Table

Press **OK**. A Programme Table will be displayed on the right side of the TV screen (See Fig. 28)

### Selecting of TV programmes

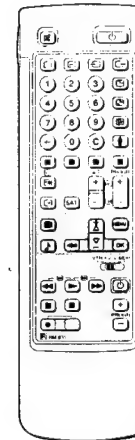
Press **PROGR** +/- or select the desired programme position using **Δ**+ or **∇**- and press **OK**.

1	4:00
2	4:15
3	4:30
4	4:45
5	5:00
6	5:15
7	5:30
8	5:45
9	6:00
10	6:15

Fig. 28.

To make the Programme Table disappear Press **MENU**.

## PICTURE CONTROL SOUND CONTROL



## Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste. In addition, you can change the aspect ratio of the TV display for wide screen effect. You can also select dual sound (bilingual) programmes when available, adjust the sound for listening with the headphones **Ω**, or individually adjust and store the volume level of each channel (volume offset).

- Press **PICT** (for picture) or **SND** (for sound) on the Remote Commander.  
or  
Press **MENU** and select **Picture Control** or **Sound Control**, then press **OK**.  
The **PICTURE CONTROL** or **SOUND CONTROL** menu appears. (See Fig. 29 or Fig. 30)
- Using **Δ**+ or **∇**-, select the item you want to adjust and press **OK**. The selected item changes colour. (See Fig. 31)
- Adjust the setting with **Δ**+ or **∇**- and press **OK**.  
The cursor appears beside the next item (at the left margin). (See Fig. 32)  
For the effect of each control, see the table below.
- Repeat steps 2 and 3 to adjust other items.

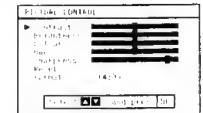


Fig. 29.



Fig. 30.



Fig. 31.



Fig. 32.

### Effect of each control

PICTURE CONTROL	Effect
Contrast	Less — — More
Brightness	Darker — — Brighter
Colour	Less — — More
Hue	Greenish — — Reddish
Sharpness	Softer — — Sharper
Reset	Resets picture to the factory preset levels.
Format	4 : 3 : Normal    16 : 9 : Wide screen effect

SOUND CONTROL	Effect
Volume	Less — — More
Treble	Less — — More
Bass	Less — — More
Balance	More left — — More right
Reset	Resets sound to the factory preset levels.
Loudness	off : Normal    on : When listening to low volume sound.
Space	off : Normal    on : Obtain acoustic sound effect.
Dual Sound	A : left channel    B : right channel    stereo mono The selected mode of the A-CD-B indicator on the TV lights up.
Volume offset	- 7 Less    0 More + 7
Headphones:	
Ω Volume	Less — — More
Ω Dual Sound	A : left channel    B : right channel    stereo mono

If you have made a mistake:  
Press **←** to go back to the previous position.  
To go back to the main menu:  
Keep pressing **←**.  
To go back to the normal TV picture:  
Press **MENU**.

Note:  
HUE is only available for NTSC colour system.

Note on LINE OUT:  
The audio level and the dual sound mode output from the G- jack on the rear correspond to the HEADPHONES VOLUME and DUAL SOUND settings.


When watching a video input source with stereo sound:  
You can select DUAL SOUND to change the sound.

## PROGRAMME TABLE

To go back to the normal TV picture: Press MENU.



## TIMER

To switch off the timer: Select "OFF" in step 3.

To check the remaining time: Press .



## Using the Programme Table

On this table, you can see which channel is preset to which programme position. You can also select programmes using this table.

- 1 From the main menu, select »Programme Table« with  or  and press OK.

The »PROGRAMME TABLE« menu appears. (See Fig. 33)

To scroll to higher programme numbers, press .

- 2 To select a programme using this menu, select the programme number with  or  and press OK. The selected programme appears.

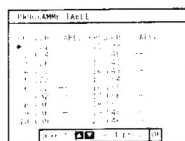




Fig. 33.



Fig. 34.



## Using the Sleep Timer

You can select a time period after which the TV automatically switches into standby mode.

- 1 From the main menu, select »Timer« with  or  and press OK. The »Timer« menu appears. (See Fig. 34.)

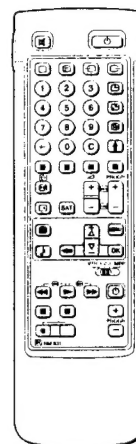
- 2 Press OK.

The time period option changes colour.

- 3 Select the time period with  or . The time period (in minutes) changes as follows:  
10→20→30→40→50→60→70→80→90  
OFF

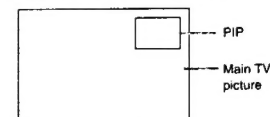
- 4 After selecting the time period, press OK. The cursor moves back to the left margin and the timer starts counting.

# PIP (Picture In Picture)



**Note**  
RGB input source cannot be displayed in PIP.

With this function you can display a "PIP screen" (small picture) within the main TV picture. In this way you can watch or monitor the video output from any connected equipment (for example from a VTR) while watching TV or vice versa. For information about connection of other equipment, refer to page 50.



## Switching PIP on and off

Press .


The PIP screen will be displayed. The PIP picture will come from the source chosen when the TV was last used.


To switch PIP off

Press  again.

## Selecting a PIP source

Press .

The symbol  will be displayed at the bottom, left-hand corner of the screen.

Press  repeatedly until the desired PIP source is indicated (e.g. TV, AV1, AV2, YC2, AV3, YC3, AV4, YC4).

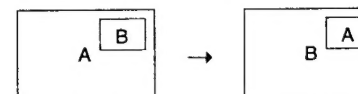
**Note**

If no video source has been connected, the PIP picture will be noisy or dark.


## Swapping screens

Press .


The main screen will switch the picture with the PIP screen.

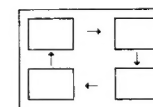


**Note**

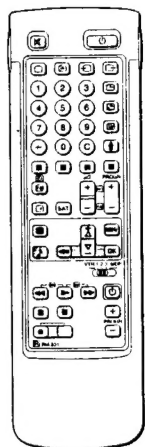
If a TV programme is on the PIP screen and a video source on the main picture, and you want to change channels, first press  and then the programme buttons or PROGR +/-.

## Changing the position of the PIP

Press  repeatedly to change the position of the PIP screen within the main screen. There are four different positions available.



# Teletext



**Note:**  
Teletext errors may occur if the broadcasting signals are weak.

**With the simple side of the Remote Commander:**  
You can switch teletext on and off, operate Fasttext, and directly select page numbers.

TV stations broadcast an information service called Teletext via the TV channels. Teletext service allows you to receive various information pages such as weather reports or news at any time you want. For advanced teletext operation, use the buttons on the Full-Function side of the Remote Commander.

## Direct Access Functions

### Switching Teletext on and off

- 1 Select the TV channel which carries the teletext broadcast you want to watch.
- 2 Press **⏻** to switch on teletext.  
A teletext page will be displayed (usually the index page). If there is no teletext broadcast, "No text available" is displayed on the information line at the top of the screen.

**To switch teletext off**  
Press **⏻**.

### Selecting a teletext page

With direct page selection

Use the number buttons to input the three digits of the chosen page number.  
If you have made a mistake, type in any three digits. Then re-enter the correct page number.

### With page-catching

- 1 Select a teletext page with a page overview (e.g. index page).
- 2 Press **OK**. Using **⬆** or **⬇**, select the desired page. "Page-Catching" will be displayed on the information line. Press **OK**. The requested page will appear in a few seconds.  
Press **⏻** to resume normal teletext reception.

### Accessing next or preceding page

Press **⏮** (PAGE +) or **⏭** (PAGE -).  
The next or preceding page appears.

### Superimposing the teletext display on the TV programme

- Press **⏻** once in teletext mode or twice in TV mode.
- Press **⏻** again to resume normal teletext reception.

### Preventing a teletext page from being updated

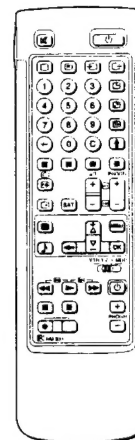
- Press **⏻** (HOLD). The HOLD symbol "⏻" is displayed on the information line.
- Press **⏻** to resume normal teletext reception.

### Using Fasttext

**Note:**  
Fasttext operation is only possible, if the TV station broadcasts Fasttext signals.

With Fasttext you can access pages with one key stroke. When a Fasttext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons on the Remote Commander.  
Press the corresponding coloured button on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed after some seconds.

GB



**Note:**  
Some of the features may not be available depending on the Teletext service.

**Note on Subtitles:**  
If the subtitles are not broadcast on page 888, please select the subtitle page using the number buttons.

## Using the Teletext Menu

This TV is provided with a menu-guided teletext system. When teletext is switched on, you can use the menu buttons to operate the teletext menu. Select the teletext menu functions in the following way:

- 1 Press **MENU**. The menu will be superimposed on the teletext display. (See Fig. 35)
- 2 Using **⬆** or **⬇**, select the teletext function you want and press **OK**. (See Fig. 36)

### USER PAGES/PRESET USER PAGES

See page 49 for information about presetting and operating the user pages.

### INDEX

The index will give you an overview of the contents of the teletext and the page numbers.

### TOP/BOTTOM/FULL

For convenient reading of a teletext page, you can enlarge the teletext display with the ability to scroll up and down the screen. After having selected the function, an information line "Top/Bottom/Full" will be displayed. (See Fig. 37)

Press **⬆** or **⬇** for Top to enlarge the upper half. For Bottom, keep pressing **⬆** to enlarge the lower half. Press **OK** for Full to resume the normal size.

Press **⏻** to resume normal teletext reception.

### TEXT CLEAR

After having selected the function, you can watch a TV programme while waiting for a requested teletext page to be displayed. (The symbol changes colour) (See Fig. 38)

Press **⏻** to view the requested page.

### SUBTITLES

Your teletext service will inform you if a TV programme is subtitled. After having selected the function the subtitles will be displayed.

### REVEAL

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option lets you disclose the information. After having selected the function, an information line "REVEAL ON/OFF" will be displayed. (See Fig. 39)

Using **⬆** or **⬇**, select ON to reveal the information or OFF to conceal it again.

Press **⏻** to resume normal teletext reception.

### TIME PAGE

Your teletext service will inform you, if a time coded page is available. You may have a page (e.g. an alarm page) displayed at a certain time.

- 1 Press **OK**, using **⬆** or **⬇**, select ON and press **OK**.
- 2 To select the desired page, enter the three digits of the page number using the number buttons.



Fig. 35.



Fig. 36.

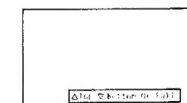


Fig. 37.



Fig. 38.

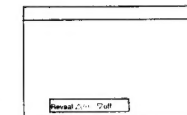


Fig. 39.

To cancel the request:  
Select "OFF" for the TIME PAGE setting.

To cancel the request:  
Select the SUBPAGE setting and press OK.

If two broadcasting stations use the same Teletext:  
You can preset one bank to 2 different programme positions.

- To select the desired time, enter four digits for the desired time (e.g. 1800) using the number buttons. Press MENU. The selected time is displayed at the top in the left-handed corner. At the requested time, the page will be displayed.

### SUBPAGE

You may want to select a particular teletext page from several subpages which are rotated automatically. After having selected the function, an information line will be displayed at the bottom of the screen.

To select the desired subpage, enter four digits using PROGR +/- or the number buttons. (e.g. enter 0002 for the second page of a sequence).

## User Page Bank System

You can store up to 30 pages in the "Teletext page bank system". In this way you have quick access to the pages you watch frequently.

### Storing pages

There are 5 "banks" (A to E) for 5 teletext stations. In each bank you can store 6 preferred pages (P1 to P6).

- Press  $\odot$  (if Teletext is not on already) and MENU to show the TELETXT MENU display.
- Select "Preset User" Pages with  $\Delta$ + or  $\nabla$ - and press OK.
- Select the desired bank with  $\Delta$ + or  $\nabla$ - and press OK. The cursor will go to the first position (P1) of the preferred pages.
- Input the three digits of your first preferred page with the number buttons. The cursor will go to the second position.
- Repeat step 4 for the other 5 page numbers you want to preset. If you do not want to preset all 6 page numbers available, press OK repeatedly until the cursor appears besides the next bank at the left margin.
- Select "Allocate Bank" with  $\Delta$ + or  $\nabla$ - and press OK.
- Select the programme position for which you have to preset pages with  $\Delta$ + or  $\nabla$ - and press OK. (See Fig. 40)
- Select the desired bank with  $\Delta$ + or  $\nabla$ - (Banks A to E are available) and press OK.
- Repeat steps 3 to 8 for the other 4 banks available.

### Displaying User Pages

- Select MENU.
- Select "User Pages" with  $\Delta$ + or  $\nabla$ - and press OK. A table of the stored preferred pages will be displayed. (See Fig. 41)
- Select the desired page with  $\Delta$ + or  $\nabla$ - and press OK. The page will be displayed after some seconds.

or

You can use the coloured buttons on the Remote Commander to have quick access to the first four User Pages. Page 1 corresponds to the red button, P 2 to the green one, P 3 to the yellow one and P 4 to the blue button.

To select the desired page press the respective coloured button while you are in TV mode. Now the Page number of this teletext page will appear in white at the top in the left-handed corner of the TV screen. When the page number changes colour the page is available. Press the coloured button again to display the page.

BANK	P1	P2	P3	P4	P5	P6
A	760	255	454	214	200	174
B	200	170	151	262	500	124
C	100	120	100	444		
D	120	121	124			
E	454	214	200	174		

ALLOCATE BANK	PRG	LINE	PRG LABEL	BANK
P1	760	1	04	M.V.
P2	255	1	05	SAT
P3	454	1	06	SAT
P4	214	1	07	SAT
P5	200	1	08	SAT
P6	174	1	09	SAT

Fig. 40.

USER PAGES - BANK B
P1: 760
P2: 255
P3: 454
P4: 214
P5: 200
P6: 174

Fig. 41.

GB

# Connecting and Operating Optional Equipment

## Connecting Optional Equipment

You can connect optional audio-video equipment to this TV such as VTRs, video disc players, and stereo systems.

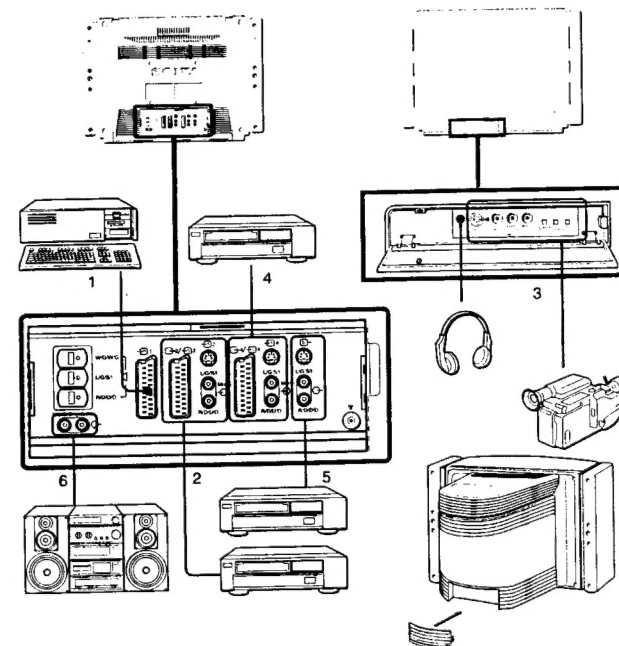
To connect a VTR using the  $\Pi$  terminal:  
Connect the aerial output of the VTR to the aerial terminal  $\Pi$  of the TV.  
We recommend that you tune in the video signal to programme number "0". For details see "Preset channels manually" on page 36.

If the picture or the sound is distorted:  
Move the VTR away from the TV.

Note:  
After having connected all optional equipment to the TV, attach the supplied cover onto the rear panel (see illustration at the right).

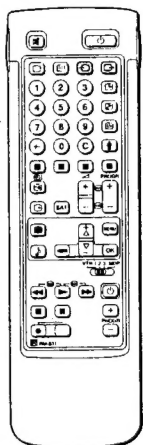
S-video input (Y/C input):  
Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals. Separating the Y and C signals prevents them from interfering with one another, and therefore improves picture quality (especially luminance). This TV is equipped with 2 S-Video input jacks through which these separated signals can be input directly.

When connecting a monaural VTR:  
Connect only the white  $\ominus$  jack to both the TV and VTR.



Acceptable input signal	Available output signal
1 Normal audio/video and RGB signal	Video/audio from TV tuner
2 Normal audio/video and S video signal	Video/audio from selected source
3 Normal audio/video and S video signal	No outputs
4 Normal audio/video and S video signal	Video/audio displayed on TV screen (monitor out)
5 No inputs	S video/audio signal displayed on TV screen (monitor out)
6 No inputs	Audio signal (variable)

**Selecting input with PROGR +/- or number buttons:**  
You can preset video input sources to the programme positions so that you can select them with PROGR +/- or number buttons.  
For details, see "Preset channels manually" on page 36.



## Selecting input and output

This section explains how to view the video input picture (of a video source connected to your TV), and how to select the output signal using direct access buttons or the menu system.

### Selecting input

Press repeatedly to select the input source.

The symbol of the selected input source will appear.

**To go back to the normal TV picture**

Press .



### Input modes

Symbol	Input signal
	Audio/video input through the  1 connector
	RGB input through the  1 connector
	Audio/video input through the  2/- 2 connector
	S video input through the  2/- 2 or  2 connector
	Audio/video input through  3 and  3 on the front
	S video input through the  3 connectors on the front (4-pin connector)
	Audio/video input through the  4/- 4 connector
	S video input through the  4/- 4 or  4 connector (4-pin connector)

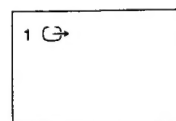
GB

You can also select the input mode using the and buttons on the TV. In this case, first select , and then press buttons to select the input.

### Selecting the output

The 2 connector outputs the source input from the other connectors.

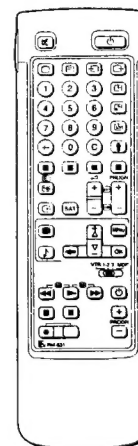
Press repeatedly to select the output.  
The symbol of the selected output source appears.



### Output modes

**Symbol 2 connector outputs**

1	The audio/video signal from the  1 connector
2	The audio/video signal from the  2/- 2 connector
2	The audio/S video signal from the  2/- 2 connector
3	The audio/video signal from the  3,  3 connectors
3	The audio/S video signal from the  3,  3 connectors
4	The audio/video signal from the  4/- 4 connector
4	The audio/S video signal from the  4/- 4 connector
TV	The audio/video signal from the  aerial terminal



**When recording:**  
When you use the (record) button, make sure to press this button and the one to the right of it simultaneously.

## Checking and selecting the input and output sources using the menu

You can display the menu to see which input sources are selected for the TV screen and PIP screen, and which output source is selected. You can also select them on the menu display.

- 1 Select Video Connection with or and press OK. The VIDEO CONNECTION menu appears. (See Fig. 42)
- 2 You can see which source is selected for the TV and PIP input, and for the output. If you want to select the input and output on this menu, go on to the next step.
- 2 Select TV Screen (input source for the TV screen), PIP (input source for the PIP screen), or output (output source) with or and press OK. One of the source items changes colour. (See Fig. 43)
- 3 Select the desired source with or . (See Fig. 44)
- 4 Press OK.
- 5 Repeat steps 2 to 4 to select the source for other inputs or outputs.

## Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most Sony remote-controlled video equipment such as: Beta, 8mm or VHS VTRs or video disc players.

### Tuning the Remote Commander to the equipment

- 1 Set the VTR 1/2/3 MDP selector according to the equipment you want to control:  
VTR 1: Beta or ED Beta VTR  
VTR 2: 8mm VTR  
VTR 3: VHS VTR  
MDP: Video disc player
- 2 Use the buttons indicated in the illustration to operate the additional equipment.

If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.

If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

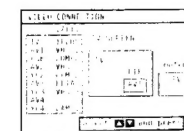


Fig. 42.

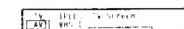


Fig. 43.

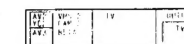


Fig. 44.

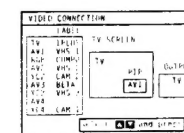


Fig. 45.